

WHAT IS CLAIMED IS:

1. A method comprising:  
acquiring an image of or pertaining to a heart; and  
registering a representation of a probe which is in or adjacent to the  
5 heart with the image using a heart vector of the heart.
2. The method of claim 1, further comprising simultaneously displaying  
the registered image, the registered representation of the probe, and a map of the  
electrical properties of the heart.
3. The method of claim 2, wherein the image is acquired using computed  
10 tomography, magnetic resonance, and/or ultrasound.
4. The method of claim 1, wherein the registering step comprises  
registering data pertaining to one or more locations of the heart vector which is  
correlated with the image with data pertaining to one or more locations of the heart  
vector which is correlated with the representation of the probe.
- 15 5. The method of claim 1, wherein the probe is configured to sense  
electrical information pertaining to the heart.
6. The method of claim 1, wherein the heart vector is determined using  
data acquired from a body surface lead system.
7. A method comprising:  
20 acquiring an image of or pertaining to a heart;  
acquiring a first data set pertaining to one or more locations of a heart  
vector of the heart, the first data set being spatially correlated with the image;  
acquiring a second data set pertaining to one or more locations of the  
heart vector of the heart;  
25 registering a representation of a probe with the image by registering  
the location of the heart vector from the first data set with the location of the heart  
vector from the second data set.

8. The method of claim 7, wherein the registering step comprises registering the heart vector from the first data set with the heart vector from the second data set for at least a portion of a cardiac cycle.

9. The method of claim 8, wherein the portion of the cardiac cycle  
5 comprises at least a portion of the QRS portion.

10. The method of claim 7, wherein the probe is configured to sense the electrical properties of the heart.

11. The method of claim 7, wherein the image is at least a three dimensional image.

10 12. The method of claim 7, wherein the second data set is acquired using at least one lead positioned on a skin surface, wherein the location of the heart vector from the second data set can be determined relative to the lead, and wherein the location of the probe can also be determined relative to the lead.

13. The method of claim 7, wherein the image comprises one or more  
15 images obtained using computed tomography, magnetic resonance, and/or ultrasound.

14. The method of claim 7, wherein the first and second data sets are acquired using a body surface lead system.

15. The method of claim 7, wherein the acquiring the second data step and the registering step are performed on a repeating basis.

20 16. A method comprising:  
acquiring an image of or pertaining to a heart;  
adjusting the size and/or position of the image using a heart vector of  
the heart.

17. The method of claim 16, further comprising registering a  
25 representation of a probe with an image, the probe being located in or adjacent to a heart.

18. The method of claim 16, wherein the image is adjusted by comparing a first heart vector data set to a second heart vector data set.

19. The method of claim 16, wherein the image is correlated to a first heart vector data set and the image is adjusted by comparing the first heart vector data set to  
5 a second heart vector data set.

20. A system comprising:  
a processor configured to be communicatively coupled to a probe, the probe being configured to be located in or adjacent to a heart;

memory configured to store:

10 an image of at least a portion of the heart;

a first data set pertaining to one or more locations of a heart vector of the heart, the first data set being spatially correlated with the image;

a second data set pertaining to one or more locations of the heart vector of the heart;

15 a display configured to display the image and a representation of the probe, the image being registered with the representation of the probe by registering the heart vector from the first data set with the heart vector from the second data set.

21. The system of claim 20, wherein the display is configured to display a map of electrical properties of the heart in conjunction with the image and  
20 representation of the probe.

22. The system of claim 20, wherein the first and second data sets are obtained using a plurality of electrocardiogram leads.

23. The system of claim 20, wherein the representation of the probe is registered with the image by registering the heart vector from the first data set with  
25 the heart vector from the second data set for at least a portion of the cardiac cycle.

24. The system of claim 23, wherein the portion of the cardiac cycle comprises at least a portion of the QRS segment.

25. The system of claim 20, wherein the system is an electrophysiology monitoring system.

26. The system of claim 20, wherein the second data set is spatially correlated with the probe.

5 27. The method of claim 20, wherein the first and second data sets are acquired using a body surface lead system.